

# **WISCONSIN CLIMATE CHANGE ACTION PLAN**

## **FRAMEWORK FOR CLIMATE CHANGE ACTION**

### **Introduction**

There is much evidence that the Earth is warming and greenhouse gas concentrations in the atmosphere are increasing (Intergovernmental Panel on Climate Change (IPCC), 1995). The connection between these two phenomena is uncertain. However, many climatologists believe that the increasing concentrations of greenhouse gases in the atmosphere are contributing to the warming of the planet. Greenhouse gases are trace gases in the atmosphere which allow visible light from the sun to pass through to the Earth's surface, but they absorb some of the infrared radiation (heat) reflected back toward space. Thus, these gases act like the glass in a greenhouse, causing the planet to warm.

The main greenhouse gas of concern is carbon dioxide (CO<sub>2</sub>). Other gases of concern include methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), chlorofluorocarbons (CFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF<sub>6</sub>). The concentrations of these gases in the atmosphere are increasing because they are emitted from various human activities. Carbon dioxide is a primary combustion product and about 6 billion tons of it are emitted each year from the combustion of fossil fuels (coal, oil, and natural gas). Another 1-2 billion tons per year are contributed through deforestation, which reduces the storage of carbon by trees. Carbon dioxide accounts for 60% to 70% of the greenhouse gases.

The IPCC, which represents the work of more than 2000 of the world's scientists, estimates that the global surface temperature will warm by an average of 2 to 6 degrees Fahrenheit over the next century if greenhouse gases continue to build up in the atmosphere at their current rate (IPCC, 1995). This would be the largest warming the planet has experienced in several thousand years, and could cause a number of environmental effects. The frequency and/or severity of these effects are uncertain and will vary from place to place. Some of the potential effects include warmer and dryer conditions in some places and increased precipitation in others, rising sea levels which would flood low-lying coastal areas, increased frequency of droughts, more frequent severe storms, disruption of ecosystems and agriculture, extinction of sensitive and endangered species, and other problems. The increase in CO<sub>2</sub> concentrations and the warming could also

have beneficial effects in some areas. These might include milder winters, longer growing seasons, and increased crop yields.

The nations of the world, taking note of the potential adverse effects of global climate change, have agreed to address the issue of climate change and anthropogenic greenhouse gas emissions. The United Nations Framework Convention on Climate Change (global climate change treaty, the Rio Accord) was signed by about 160 nations in 1992 and went into effect in 1993. Under the treaty, industrialized nations adopted the nonbinding goal of reducing their greenhouse gas emissions to 1990 levels by 2000. Almost none of the industrialized countries will attain this goal. The Kyoto Accord of 1997 will strengthen the treaty if it is signed and ratified. As written, it will require the industrialized nations to reduce their greenhouse gas emissions below 1990 levels by the emission budget period of 2008-2012. Neither the UNFCCC nor the Kyoto accord requires developing countries to reduce their greenhouse gas emissions.

### **Summary of Wisconsin Greenhouse Gas Studies**

The Wisconsin Department of Natural Resources (DNR) has been studying Wisconsin's greenhouse gas emissions for several years. Four studies have been completed. The first study, completed in 1993, quantified Wisconsin's 1990 greenhouse gas emissions. [WDNR, 1993 (Report 1)] In the second study (documented in Report 2), emissions were projected through 2010. These studies found that Wisconsin emitted about 140 million tons of greenhouse gases into the atmosphere in 1990, and these emissions are expected to increase to around 180 million tons by 2010, representing an increase of 28% in greenhouse gas emissions, or an annual compound growth rate of 1.2%. About 90% of these emissions are carbon dioxide emitted from fossil fuel combustion. The two main fossil fuel combustion sources are motor vehicles and electric utility power plants, each of which contributes about one-third of Wisconsin's total greenhouse emissions.

It should be noted that even though the electric utility power plants are the emission sources, the demand for and use of electricity by industrial plants, businesses and individual consumers is the actual cause of the electricity emissions. However, the electric utilities' choices of fuels and technologies for generating electricity also have a significant effect on the emissions of greenhouse gases and other pollutants.

The DNR, in cooperation with other agencies and organizations, has just completed the Wisconsin Greenhouse Gas Emission Reduction Cost Study [WDNR, 1998 (Report 3)]. This study examined a large number of potential greenhouse gas emission reduction measures and quantified the cost and potential emission reduction for many of them. It focused on reducing carbon dioxide emissions from the electric utility and transportation sectors since

these are the major sources. The study found that greenhouse gas emissions in Wisconsin can be significantly reduced at little or no cost. (Program implementation costs were not included in this analysis.) Through the use of energy efficiency measures alone, Wisconsin can reduce greenhouse gas emissions by 12.5 million tons in 2010 while saving about \$490 million in energy expenditures. These measures primarily include the replacement of electric appliances and equipment in all sectors with higher efficiency equipment. Over the long term, these measures save money by reducing electricity use, but they do require capital investments (sometimes fairly large) up front to purchase the more energy efficient appliances and equipment. Some industrial fuel combustion efficiency improvements were also included and accounted for about four million tons of the emission reduction.

The study also found that Wisconsin's greenhouse gas emissions can be reduced by 21 million tons in 2010 through switching coal-fired power plants to natural gas, and by 1.5 million tons through modest improvements in automobile fuel efficiency. All of these measures together could produce a total emission reduction of about 35 million tons in 2010. The 35 million ton emission reduction would reduce Wisconsin's greenhouse gas emissions to about 1.3 million tons over 1990 levels.

The study found that the 35 million ton/year emission reduction could be achieved at an overall cost saving of about two million dollars, with energy efficiency savings approximately balancing the cost of the fuel switching. The switching of electric utility coal-fired power plants to natural gas would cost about \$460 million and approximately double the state's consumption of natural gas. The cost estimate for switching utility boilers from coal to natural gas did not include the cost of expanding and extending natural gas pipelines nor the potential increase in natural gas prices that such a massive increase in natural gas use might cause.

In the fourth study, done by Leonardo Academy with input from the DNR and other groups, the impact on Wisconsin's economy of investments to reduce greenhouse gas emissions was studied (University of Wisconsin Consortium for Integrated Resource Planning, 1998). The study used an economic forecast model and found that the end-use energy efficiency measures documented in Report 3 would create 8,500 jobs in 2010 while increasing disposable income by \$490 million and gross state product by \$41 million. This study demonstrates that using energy efficiency measures to reduce greenhouse gas emissions in Wisconsin benefits both the environment and the economy.

## **The Climate Change Committee**

In 1994, Secretary Meyer established the Climate Change Committee within the DNR in response to concerns about the threat of global climate change. It was recognized that the U.S. had agreed to reduce greenhouse gas emissions when it signed the Rio Accord in 1992, that this will affect every state in the union, and that Wisconsin must be prepared to help facilitate the national and international greenhouse gas emission reduction goals. The committee was charged with the task of developing "a strategic plan specifying the actions Wisconsin should take to address climate change issues."

This climate change action plan was developed by the DNR with review and assistance from the Climate Change Committee. The discussion section that follows the action plan summarizes the viewpoints of different committee members on the recommended individual actions. The recommendations in this plan will be submitted to Secretary Meyer. The plan will be implemented through a coordinated effort by various state agencies, businesses, trade associations, and other groups.

## **Phased Climate Change Action Plan**

Future international and national developments in adopting a Global Climate Change Agreement are uncertain. The decisions that are made at those levels will greatly influence state policy. The timetable adopted at the December 1997 Kyoto conference calls for ratification of the international climate change treaty by March 1999. The Kyoto treaty promises to provide the foundation for a fierce debate as the United States heads into the 1998 congressional elections. The outcome of that debate is far from certain. Nevertheless, there are actions and measures that we can take now that make sense to do, regardless of international and national policy decisions. These are actions and measures, often called "no regrets" actions, which pay back the up-front costs over a number of years through energy savings and which are relatively easy to implement.

No regrets actions are actions which, in addition to reducing greenhouse gas emissions, also have economic benefits. These economic benefits alone justify taking these actions, so they are not being taken for the sole purpose of reducing greenhouse gas emissions. These actions have no cost over the long term because the economic gains outweigh the cost of taking the action. Energy efficiency measures are prime examples of no regrets actions. They save energy, save money, increase productivity and competitiveness, and they also decrease greenhouse gas emissions. These are actions that we will not regret taking even if greenhouse gas emission reductions turn out to be

unnecessary.

For these reasons, we recommend that Wisconsin chart its course for reducing greenhouse gas emissions in phases. The first phase is a foundation-building phase. It recommends actions that Wisconsin can take to begin to reduce the rate of growth in greenhouse gas emissions by promoting and encouraging choices that are more energy efficient and less polluting. Most of these are “no regrets” actions. It also recommends a structure and process to measure, document and evaluate Wisconsin’s progress in reducing greenhouse gas emissions. In addition, it recommends active state participation in the development of the national climate change strategy. Only by taking an active role in the national discussion can we be assured that the unique interests of Wisconsin are not lost in the larger policy debate. This plan also recommends the concurrent development of a Wisconsin strategy developed in concert with national and international policy direction and reflecting technological, economic and institutional developments. The next phase would evaluate state and local policies and actions to dovetail with international and national policies to achieve the agreed upon national and international target for greenhouse gas emission reductions. This phased approach will enable Wisconsin to evaluate its progress, learn from experience, and incorporate technological and institutional developments over time.

### **Definitions**

Actions: Policies and programs to encourage or implement emission reduction measures.

Measures: Actual emission reduction activities.

### **Fundamental Principles**

The Wisconsin Climate Change Action Plan rests on five fundamental principles:

1. The global climate is adversely influenced by anthropogenic emissions of greenhouse gases, and a reduction in the production rate of these emissions in Wisconsin will contribute to reducing this adverse impact.
2. More efficient use of energy will reduce the rate of growth in demand for energy, compared to a “business as usual” scenario.
3. Energy production from ‘cleaner’ fuels will result in lower levels of greenhouse gas emissions. These fuels can be used more efficiently and

are less polluting, and include non-carbon and additional renewable energy sources.

4. Other non-energy-related measures offer additional potential to achieve a net reduction in greenhouse gas emissions. Examples include carbon sequestration and methane abatement measures.
5. Actions resulting in greenhouse gas emission reductions can, depending on the public and private choices made, also result in decreased levels of other pollutants in the environment, including nitrogen oxides, sulfur dioxide, particulate matter and mercury. Reducing emissions of other pollutants can also reduce greenhouse gas emissions. For this reason, an integrated approach could minimize costs and maximize emission reductions.

## **PHASE I: NEAR TERM CLIMATE CHANGE ACTION PLAN**

The focus of Phase I actions are to:

- I. Implement actions that will result in businesses, governments and citizens adopting energy efficiency measures, with an emphasis on education and voluntary participation.
- II. Implement actions that will result in businesses, governments and citizens adopting measures that will shift the mix of fuel sources toward a higher proportion of cleaner energy sources, with an emphasis on voluntary participation.
- III. Adopt state policies which promote reductions of greenhouse gas emissions.
- IV. Reduce emissions of greenhouse gases other than carbon dioxide
- V. Monitor, document and evaluate Wisconsin's progress in reducing greenhouse gas emissions.
- VI. Participate in national policy formulation in a manner consistent with Wisconsin's long term needs
- VII. Develop the next phase of Wisconsin's Climate Change Action Plan, using the experience gained and lessons learned through Phase 1.

## **I. ACTIONS TO IMPLEMENT ENERGY EFFICIENCY MEASURES**

### Introduction

Many energy efficiency measures will more than pay for themselves over their lifetime. The United States Climate Change Action Plan established the goal of reducing greenhouse gas emissions to their 1990 levels by the year 2000 through voluntary programs. However, emissions increased at an accelerated rate as a result of strong economic growth and declining energy prices. The State of Wisconsin, most Wisconsin electric utilities and numerous industrial facilities in Wisconsin participate in many of the federal Climate Change programs: Climate Challenge, Climate Wise, Green Lights, Motor Challenge, to name a few. While these programs have achieved significant efficiencies where implemented, their market penetration has not been as great as needed to achieve the full potential for energy efficiency, and energy efficiency gains have been more than offset by the strong economy which created a growing demand for fuels. More needs to be done.

There is a large gap between the potential and actual levels of investment in energy efficiency measures that are cost effective. Among the reasons commonly cited in the literature are market barriers and market failures. Market barriers include high initial costs and high transaction costs. According to surveys of utility customers, many customers feel they cannot afford the higher up-front cost of such measures, even if they do pay for themselves within a few years. Furthermore, customers often find it difficult and time-consuming to collect and evaluate the information on the relative performance of higher efficiency versus standard efficiency units and then to locate a retailer that stocks the equipment.

Market failures, or structural market barriers, include third party purchases, market availability, market information and externalities. There is a divergence of interests, for example, between a landlord who supplies the appliances and the renters who pay the utility bills. Sometimes, energy efficiency units cannot be found in the local area or the service industry may not be up to speed on the repair of these units. In addition, consumers have imperfect information. Many consumers don't clearly understand the energy use labeling on appliances and are easily confused by terms used by contractors. Consumers do not know the amount of energy consumed by the different end uses, since detailed end use information on energy consumption is not included in utility bills, which makes it difficult to assess the cost-effectiveness of alternative units. Externalities, such as climate change, are not included in the price of goods and therefore consumers may be unaware of



or do not feel individually responsible for these societal costs.

Finally, consumers may not factor energy efficiency benefits into their decision-making process. Thus, they tend to focus on the initial purchase price rather than the life cycle costs of owning an appliance. Additionally, consumers in Wisconsin “expect” energy to be available and are accustomed to the lower energy rates found in Wisconsin. Many consumers are still unaware of the value of energy efficiency and conservation and its impact on the environment.

To address some of these market barriers, consumer education programs are needed. These programs will need to educate consumers on the connection between their choices and actions and environmental emissions. Efforts are also needed to make it easy for consumers to make choices that reduce environmental emissions.

Concurrent with Wisconsin’s development of a Climate Change Action Plan is the development of a response to USEPA’s proposed nitrogen oxide emission budget for Wisconsin as part of a regional ozone transport reduction strategy.

This will require the development of a state implementation plan to attain and maintain emission levels at or below the state NOx emission budget. Energy efficiency measures taken to reduce greenhouse gas emissions will also reduce NOx emissions. Statewide NOx emissions during the five month ozone season in 2007 are projected to be 183,000 tons. The new SIP call NOx emission budget will require those emissions to be reduced by about 40%, or about 73,200 tons. It is estimated that implementation of the “up to \$0/ton” scenario described in Report 3 (WDNR, 1998) (primarily energy efficiency measures) would reduce NOx emissions during the ozone season in 2007 by about 7,000 tons.<sup>1</sup> This represents approximately 10% of the reductions needed to meet USEPA’s proposed 2007 ozone season NOx budget.

Proposed Actions to implement energy efficiency measures include:

1. Wisconsin state government leads by example
2. Vigorously promote voluntary private sector-led initiatives to adopt energy efficiency measures (including fuel switching)
3. Financial incentives for cost effective energy efficiency measures
4. Revise or update state building codes to support energy efficiency improvements

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<sup>1</sup> This was estimated in Wisconsin Greenhouse Gas Emission Reduction Cost Study, Report 3, WDNR, 1998

The intent of this phase of the Wisconsin Climate Change Action Plan is to promote and encourage choices that are more energy efficient and less polluting. Thus, consumer education will be an important component of all the proposed actions. Another important component running through these proposed actions is to make it easy for consumers to adopt energy efficiency measures.

### **Description of Proposed Actions**

#### **1. Wisconsin state government leads by example.**

Rationale Wisconsin state government is among the largest users of fossil fuel energy in the state. Through its actions, it can set an example for others to follow while making a significant contribution to greenhouse gas emission reductions. For Wisconsin state government to effectively lead by example, it is important that the actions it undertakes be justified by the cost savings and emission reductions.

#### **Recommended Actions**

- a. State government, through the Bureau of Energy and Division of Facilities Development, should gather data on energy efficiency measures already taken in state owned facilities and vehicle fleets. This does not need to be an extensive data gathering exercise. This information should be widely disseminated so that the state's leadership role sets an example for others.

Estimated Cost: \$1000 (40 hours FTE @ \$25/hour)

- b. State government should set a goal of near 100% participation by 2010 in the Energy Star, Green Lights and other energy efficiency programs for state-owned residential and office buildings. Examples of measures included in these programs are the purchase of energy-efficient office equipment (computers, copy machines, fax machines, etc.), replacing older lighting with more efficient lighting, installing the most efficient lighting systems in new buildings, and replacing inefficient exit signs with new efficient LED exit signs.

Estimated Cost: No additional cost since initial costs will be recouped through energy savings. State government already participates in these programs and therefore there are no additional programmatic or administrative costs.

- c. State government should reduce greenhouse gas emissions from its vehicle fleet by purchasing, wherever technically and economically feasible, vehicles which are highly fuel efficient.

Estimated Costs: No additional cost. In most cases, highly fuel efficient vehicles are not more expensive than less fuel efficient vehicles. There are no additional programmatic or administrative costs.

- d. State government should establish a comprehensive Transportation Demand Management (TDM) Plan for state agencies, with clear goals for reducing single occupancy vehicle (SOV) driving, either by commuting employees or work-related trips. In developing this comprehensive TDM plan state government should explore programs that give state employees a choice of compensation for reducing SOV driving, including transit passes, van pool benefits and cash for personal transportation choices, including cycling. This could be a phased program, with expanded options as they become available.

Estimated Costs: Many state agencies have already prepared TDM plans for their facilities in Southeastern Wisconsin as part of a previous program (the Employee Commute Options Program). It is estimated that the cost to establish a state TDM program which would apply to all state agencies would be about .5 FTE.

- e. State government should locate new state buildings and rentals in urban areas that are well-served by transit and which allow access on foot to typical urban amenities, including restaurants. Exceptions could be allowed in cases where an agency's work specifically required a different location.

**Estimated Costs:** It is not possible to estimate costs since each decision is so site-specific.

- f. Continue and expand the use of performance contracting to deliver increased energy efficiency in state buildings.

Estimated Costs: Performance contracting has resulted in reduced operating costs.

- g. State government should disseminate information on energy efficiency and its environmental benefits and cost savings to state employees and the public.

Estimated Costs: No additional costs. This is an on-going activity of the Wisconsin Energy Bureau.

## **2. Vigorously promote voluntary private sector-led initiatives to adopt energy efficiency measures**

Rationale The current mix of resource energy consumption in Wisconsin is:

- 24% Residential
- 19% Commercial and institutional
- 30% Industrial
- 25% Transportation
- 2% Agricultural

(Figures from *Wisconsin Energy Statistics 1977*, Wisconsin Energy Bureau)

The projected growth in demand for energy between 1990 and 2010 for each sector is:

- 25% Residential
- 68% Commercial/Institutional
- 61% Industrial
- 14% Transportation
- (-4%) Agricultural

Figures from *Wisconsin Greenhouse Gas Emission Reduction Cost Study*, Report 3, WDNR

Reducing the rate of growth in demand for energy now will have a compounding beneficial effect on reducing greenhouse gas emissions in the future. Furthermore, investments in energy efficient technologies provide a similar, and often improved, level of service (heating, cooling, lighting and drive power) comfort and convenience to the consumer, or end user.

There are numerous potential measures which could be pursued within each sector, including expanding existing federal and state energy efficiency

programs. A catalogue of greenhouse gas emission reduction measures has been prepared as an adjunct to this plan.

The focus of this action plan is on promoting and encouraging public and private choices that are more energy efficient and less polluting. Informed consumers and easy access to higher efficiency alternatives are essential to a voluntary approach to reducing greenhouse gas emissions. This recommendation rests on the belief that the private sector can best muster the creativity, innovation and mechanisms to implement successful voluntary programs. The degree to which emission reductions can be reached through voluntary measures should mean less of a regulatory approach in the future.

#### Recommended Actions

- a. For each of the five energy consumption sectors (residential, commercial/institutional, industrial, transportation and agricultural), work with an existing group or establish a task force with members from key trade associations, environmental and other citizen groups, local governments and state agencies. Participation on the task force would be voluntary.
- b. Ask each task force to establish emission reduction targets and to develop a strategy to maximize reductions through voluntary measures. Goals set by the task force would be voluntary.
- c. The primary objective is to implement “zero cost” emission reduction measures. If businesses and/or individuals find that it is in their interest to do more to reduce emissions, they would be encouraged to do so. For example, a reduction measure may become cost-effective when analyzed from the perspective of total emission reductions (nitrogen oxides, mercury, sulfur dioxide and particulates) instead of just the carbon dioxide reductions and the energy savings.
- d. Each task force would establish a system for tracking progress toward their goals, disseminating information about what has worked and what has not worked and publicizing progress toward their goals. Any system established for tracking greenhouse gas emissions or emission reductions should satisfy reporting requirements established at the national and international levels.
- e. It is anticipated that activities would include efforts to inform and educate consumers and to make it easy for them to adopt or install energy efficiency measures.

### **3. Financial incentives for cost-effective energy efficiency measures**

Rationale One of the deterrents to installing higher efficiency units is their

relatively higher initial capital cost than standard-efficiency units. Financial incentives which would lower or spread out these higher costs should increase the rate of adoption. With the pending utility restructuring, it is likely that utilities will no longer be required to promote energy efficiency measures. This leaves a gap in activities and incentives to promote the adoption of energy efficiency measures by end users. Funding for these activities could come from a variety of sources, including appropriations through legislation, federal grants, federal tax incentives, private grants or other sources. One example of a potential funding source is a public benefits fund such as the one proposed by the Public Service Commission.

### Recommended Actions

- a. A fund, such as a public benefits fund, could administer a competitive bidding process to select the most cost-effective energy efficiency projects. Requests for proposals could be issued at regular intervals. Criteria for selection of the winning bidders should include the amount and cost per ton of greenhouse gas emissions avoided as a result of implementing the project.
- b. Increase private and public lender and realtor participation in the Home Performance Rating Program to promote energy mortgages and use the rating to process energy mortgages and home equity loans for home buyers and homeowners. Encourage and work with lenders to develop creative programs that provide interest-rate reduction or closing cost assistance for home buyers or owners making cost effective energy efficiency improvements or building energy efficient homes. This might be an activity of the Residential Sector Task Force initiative described earlier.
- c. Promote the EPA Energy Star Homes Program and financial lending incentives offered by national lenders for newly constructed homes that receive a home energy rating of the set target level, currently 86 or greater. This might also be an activity of the Residential Sector Task Force described earlier.
- d. Continue to fund and offer the Home Performance Rating Rewards Program. This program offers cash rewards to homeowners for making improvements that increase their home's energy efficiency or for building an energy-efficient home.
- e. Consider the adoption of financial incentives for the commercial and industrial sectors such as tax credits for businesses that install energy



efficient equipment.

#### **4. Revise or update state building codes to support energy efficiency improvements.**

Rationale The State often sets standards and goals to help achieve environmental objectives, allowing flexibility in meeting those goals whenever possible. The codes for energy efficiency in buildings can reflect the most current minimum standards for efficient energy use, while allowing for new technologies which provide energy savings. Energy efficiency which is built into new buildings has the advantage of long-term energy savings, since they extend over the life of the building.

##### Recommended Actions

- a. By 1998, adopt proposed changes to the Uniform Dwelling Code which approximate the requirements of the CABO Model Energy Code 1995. By 2001, adopt changes to the Uniform Dwelling Code which approximate the requirements of the CABO Model Energy Code 1998.
- b. By 1999, adopt changes to the Rental Weatherization Code that are cost effective, and include a performance-based alternative method of compliance.
- c. Continue, as required by state statutes, to adopt changes to the energy portions of the Commercial Building Code to bring it into conformity with the latest revision to ASHRAE Standard 90.1.
- d. Establish a regular review process to assure compliance with state energy use and conservation objectives for the state's own operations.
- e. By 2000, require that communities of less than 2,500 enforce the Uniform Dwelling Code and conduct site-inspections to ensure compliance with the energy provisions of the UDC.
- f. Increase training efforts of builders, code officials and contractors with the energy provisions of the code and how to achieve energy provisions with new techniques and technologies for greater energy efficiency and occupancy comfort.

## **II. ACTIONS TO PROMOTE A SHIFT TO A HIGHER PROPORTION OF CLEANER ENERGY SOURCES**

## Introduction

The mix of energy consumed in Wisconsin in 1996 was as follows:

Coal:	31.7%
Petroleum:	31.4%
Natural Gas:	25.5%
Nuclear	6.9%
Renewable:	4.5%

Figures from *Wisconsin Energy Statistics 1997*, Department of Administration, Wisconsin Energy Bureau. Figures are preliminary estimates.

Note that about 89% of the energy consumed in Wisconsin was from fossil fuels, while only 4.5% was from renewable sources. The renewable sources include solar, wood, biogas, municipal solid waste, and hydroelectricity.

From a long-term strategic perspective, the public will benefit from a shift to energy sources and technologies which are more efficient and less polluting. Wisconsin will also realize economic development benefits from the creation of new industries to serve this market. Investment to nurture this market will have long term benefits. Furthermore, with the pending utility restructuring, it is uncertain that electric suppliers will be required to invest in renewable energy, although they may do so, since green power programs can be financially viable. This is evidenced by current utility efforts to implement green pricing programs.

Phasing in cleaner energy sources and technologies (more efficient, less polluting, non-carbon, non-fossil, renewable) will move the state away from reliance on fossil fuels while simultaneously reducing emissions of carbon dioxide and other pollutants. However, it is important to note that technology which allows for more efficient use of fossil fuels continues to evolve, and the use of these cleaner fossil fuel technologies will also help reduce greenhouse gas emissions. It is also important to note that natural gas, while it is a fossil fuel, is a cleaner alternative than coal or oil, and that switching from burning coal to burning natural gas reduces greenhouse gas emissions.

Market penetration of renewable energy sources and technologies has been limited by several factors, including capital costs and lack of familiarity with the new technologies. The costs of these technologies are generally higher than the cost of using fossil fuels. However, if fossil fuel subsidies are eliminated and the external environmental and social costs are included,

some renewable and cleaner energy sources may cost less than fossil fuel combustion. Environmental regulations applied to fossil fuel combustion sources over the years have helped to internalize some of these external costs. Upcoming regulations to control emissions of NO<sub>x</sub>, fine particulates, and possibly mercury and other compounds will continue this cost internalization.

Proposed Actions Include:

1. Wisconsin state government leads by example
2. Vigorously promote private sector-led initiatives to move toward cleaner energy sources and technologies
3. Financial incentives to increase renewable energy use
4. Participate actively in research and development projects designed to reduce emissions per unit of energy generated

## **Description of Proposed Actions**

### **1. Wisconsin state government leads by example**

**Rationale** As stated before, Wisconsin state government is one of the largest users of fossil fuel energy for building heating, lighting and air-conditioning, motor vehicles, and electricity production. The state can both set an example and help stimulate markets for use of clean fuels and renewable energy technologies.

#### **Recommended Actions**

- a. Implement the Governor's directive to have 2000 alternatively fueled vehicles in the state fleet by the year 2000 and set a follow-up target for the year 2010. Alternatively fueled vehicles include those which use natural gas, propane, LPG, hydrogen and other "cleaner" fuels.

Coordinate and take a leadership role in working with the private sector to set up the necessary refueling infrastructure to achieve the maximum potential benefits of alternatively fueled vehicles.

Note: To date, there are 460 such vehicles in the fleet. Of those, 370 are E85 vehicles (i.e., vehicles which can burn up to 85% ethanol mixed with gasoline). Because there are few E85 refueling stations, these vehicles are running mostly on gasoline. The remainder of the 460 alternatively-fueled vehicles burn compressed natural gas or propane.

A wide variety of alternative fuels is available. Each results in different levels of emission reductions of carbon dioxide, nitrogen oxides and other air pollutants. The overall mix of emission reductions should be considered in managing the state's vehicle fleet "emissions portfolio".

Estimated Cost: No additional cost since this is already a Governor's directive.

- b. Establish a target for the percentage of electricity purchased or produced by state government that comes from renewable sources (beyond any legislative requirement for generation portfolio standard). For example, 10% (or some other amount) of electricity purchased or produced in 2010 could be supplied by renewable technologies. One way in which this could be done is for state government to purchase "green power" in voluntary green pricing programs.

Estimated Cost: The cost of renewable energy varies between the different renewable technologies, making it somewhat difficult to estimate the cost

of this action. As an example, Madison Gas & Electric estimates that the cost of electricity generated by the wind plant they are building will be two to four cents more expensive per kilowatt hour compared with coal. This would increase the cost of commercial electricity from five cents to about eight cents per kilowatt hour, or a 60% increase. Wisconsin Electric estimates the increased cost of their green power program to be one-half to two cents per kilowatt hour. In contrast, state run heating and power plants are currently burning paper pellets and saving money.

- c. State power plants should continue expansion of renewable fuel use to the maximum possible considering technical and economic feasibility. These facilities should explore co-firing biomass energy crops such as switchgrass, poplar or willow with coal.

Estimated Costs: No additional costs since the use of renewable fuels meets the state's cost analysis requirements.

## **2. Vigorously promote private sector-led initiatives to move toward cleaner energy sources and technologies**

Rationale More efficient use of electricity by end users is only half of the emission reduction equation for the electricity sector. The other half of the equation is moving to cleaner sources of supply of electricity delivered to consumers. This action involves the generators of electricity who produce the electricity, the operators of the electricity transmission and distribution systems that deliver the electricity generated to the consumers, and the retail power marketers who sell consumers electricity. Whether these functions are provided by one entity or multiple entities, the providers of all three functions can develop and implement innovative voluntary ways to reduce the environmental emissions per kilowatt hour (kWh) delivered to consumers. It is proposed that this work be done by three task forces, one for each functional area. The work of these task forces will be modeled on the Climate Wise program, which encourages voluntary commitments and actions by industry. The task forces will, wherever possible, be based on existing industry groups.

### Recommended Actions

- a. Establish a task force for each of these power supply, power delivery, and power marketing groups including the range of types of power generators, delivery system operators, and retail power marketers. Participation on these task forces is voluntary, and any goals that are set are voluntary.
- b. The generators task force will set voluntary goals for reducing the

emission per kWh delivered to consumers and work to achieve these goals by developing and implementing innovative voluntary actions to reduce the amount of emissions per kWh of electricity produced. These actions may include increasing the efficiency of power plants, shifting to cleaner fuels, and shifting to renewable generation technologies.

- c. The task force for operators of the electricity transmission and distribution systems will set goals for reducing the emissions associated with the energy that is lost during the transmission and distribution process and work to achieve these goals by developing and implementing innovative voluntary actions to reduce transmission and distribution system losses.
- d. The task force for retail power marketers will set goals for reducing the emissions per kWh of electricity sold to consumers and work to achieve these goals by developing and implementing innovative voluntary actions to market electricity produced with lower emissions per kWh.
- e. Each task force will establish a system for tracking progress toward the goals they have set, disseminating information about what has worked and what has not worked, and publicizing progress toward the goals they have set.

### **3. Financial incentives to increase renewable energy use**

Rationale Renewable energy sources offer the long term potential to provide lasting reductions in greenhouse gas emissions. However, they are still in the early stages of market penetration and their costs are often higher than fossil fuel costs. Market penetration has been limited by several factors, including capital costs and lack of familiarity with new technologies. Previous incentive programs (e.g. tax credits for solar installations) have helped to overcome these barriers.

#### Recommended Actions

- a. Develop economic incentive programs for homeowners and businesses.
  - 1. Develop governmental or private economic incentive programs to encourage solar electricity or hot water installations, in cooperation with the federal "Million Solar Roofs" program.
  - 2. Develop an incentive program to encourage rural homeowners and businesses to install wind turbines.
- b. Utilize public funding to increase renewable energy use.

Public funding could be used to establish a competitive bidding process to finance renewable energy programs (see section I.3 above for a discussion of possible funding sources). For example, a Request for Proposals could be issued that would solicit proposals for specified amounts of renewable energy. The most cost-effective bids would be selected. This would be a market-based approach to selecting the most effective renewable energy measures.

#### **4. Participate actively in research and development projects designed to reduce emissions per unit of energy generated**

Rationale Energy efficiency, cleaner fuels and a more deliberate consideration of the emissions impact of energy generation will make a major contribution to the reduction of greenhouse gas emissions. However, there must be no impression that this is the total solution. As with so many issues facing the nation in the past, we will not solve this problem without advances in technology. Wisconsin entrepreneurs and businesses stand to gain substantially and the state's competitive position will be improved significantly if Wisconsin is a leader in the development and production of new technologies that help solve this global concern. This is a vast new global market that Wisconsin companies can enter.

Public funds for environmental research and development can be leveraged with additional public, private and academic resources to maintain Wisconsin's stature as a leader in the fields of energy and environmental research. Possible sources for public funding are described in section I.3.

##### Recommended Actions

- a. Assure that state level R&D funding for research on clean fuel and renewable technologies is maintained, or even increased.
- b. Support the continuation and expansion of existing R&D institutions (e.g. the Energy Center of Wisconsin and University of Wisconsin renewable energy research) and funding programs in Wisconsin.
- c. Comprehensively monitor, document, and evaluate renewable energy resources in Wisconsin to determine renewable energy potential. Build on existing programs to develop reliable and comprehensive information on renewable energy potential. Make this information easily accessible and usable to energy providers, for example by making it geographically specific. Examples include:
  1. Monitor wind power resources in Wisconsin, both on-shore and off-shore (Lakes Michigan and Superior)
  2. Monitor solar power resources throughout the state.
  3. Determine the potential biomass resource in Wisconsin.
  4. Determine the potential for distributed generation of electricity.
- d. Conduct research on environmental issues related to renewable technologies, such as avian monitoring for wind power and habitat effects of biomass crops. This research could be conducted by a university, the



DNR, or another research organization with funding from the federal or state government, the electric utilities, or the manufacturers and installers of the renewable technologies.

### **III. STATE POLICIES TO PROMOTE GREENHOUSE GAS REDUCTIONS**

Through its policy actions, Wisconsin state government has the opportunity to encourage measures that could result in lower greenhouse gas emissions. In some cases, these policies either create incentives or remove deterrents to taking specific emission reduction measures. In other cases, the policies would promote the inclusion and integration of greenhouse gas considerations in public and private decision-making.

#### **1. Credit for early emission reductions**

Rationale A significant deterrent to industry adoption of energy efficiency measures and the shift to "cleaner" fuels as a greenhouse gas reduction strategy is the concern that those who take early actions to reduce emissions would be penalized if a future regulatory program required them to make emission reductions over and above those they had already made. A system for assuring that early reductions are fully creditable toward existing or future federal or state requirements will help overcome this hesitancy. One way to ensure credit for early reductions is to help facilitate the development of a reporting system that meets the needs of and is officially recognized by reporting organizations, the Wisconsin DNR, the U.S. Department of Energy and U.S.EPA.

#### Recommended Actions

- a. Establish a working group to examine potential reporting systems and establish standards and quality assurance guidelines for reporting. Any system that is selected must be officially recognized at the national level as crediting early reductions toward existing and future federal or state requirements.

The working group should include WDNR Air Management, DOA Bureau of Energy, and stakeholders. In addition, USEPA and the US Department of Energy should participate either as working group members or in consultation roles.

A starting point for developing a system that works for everyone is the EIA 1605(b) Voluntary Reporting of Greenhouse Gases database which was established under the Energy Policy Act of 1992. The benefits of using an existing system include: (1) many utilities and companies have already

used the system; (2) this system may be used to establish baseline credits at the national level; (3) technical assistance for this reporting system is available at the federal level, including a toll-free help line; (4) it would ensure that Wisconsin companies and utilities that participate in voluntary federal programs, like Climate Wise and Climate Challenge, only have to record their greenhouse gas reductions in one place; and (5) it would save the state resources since a whole new database, reporting system and supporting materials would not have to be developed. A disadvantage of this system (or any system, to date) is that it has not been internationally recognized.

Alternative systems that might be appropriate include:

- i. Document GHG emission reductions in a manner similar to that used to certify volatile organic compound or nitrogen oxide emission reductions for emission offset purposes in ozone nonattainment areas.
  - ii. Use the air emission inventory to document and track carbon dioxide emissions. Set a baseline year and register emission levels below the baseline for credit.
  - iii. For energy efficiency measures taken by the end user (as opposed to the energy producer), have the Wisconsin Energy Bureau certify the implementation of the measure and calculate expected energy savings and have the WDNR calculate the associated GHG emission reductions. Depending on the measures, develop a compliance demonstration system to measure annual emission reductions.
- b. The DNR should work to obtain written assurance from the appropriate federal regulatory agencies that any greenhouse gas emission reductions made in Wisconsin are fully creditable under existing (e.g., EPA's NOx SIP call) or future federal mandates. This action is critical if Wisconsin industries are to get credit for early reductions. DNR should also participate at the national level in the process of determining how early reductions will be credited.

**2. Include energy efficiency as part of state strategies and plans for meeting emission reduction requirements for other pollutants, including the development of ozone and other State Implementation Plans, such as PM2.5.**

Rationale The US Environmental Protection Agency has issued a proposed nitrogen oxide emission budget for Wisconsin as part of a regional ozone transport reduction strategy. This will require the development of a state implementation plan. Since the major source of nitrogen oxide emissions is

also fuel combustion, there is a tremendous opportunity to integrate greenhouse gas and nitrogen oxide emission reduction efforts. Energy efficiency measures taken to reduce greenhouse gas emissions will also reduce NOx emissions. Statewide NOx emissions during the five month ozone season in 2007 are projected to be 183,000 tons. The new SIP call NOx emission budget will require those emissions to be reduced by about 40%, or about 73,200 tons. It is estimated that implementation of the “up to \$0/ton” scenario described in Report 3 (primarily energy efficiency measures) would reduce NOx emissions during the ozone season in 2007 by about 7,000 tons.<sup>2</sup> This represents approximately 10% of the reductions needed to meet USEPA’s proposed 2007 ozone season NOx budget.

The Wisconsin DNR and Energy Bureau are members of an EPA-led workgroup to develop guidance for states on how to better include energy efficiency and renewable energy in the state implementation plans.

#### Recommended Actions

- a. Include energy efficiency/renewable energy projects in a NOx trading program, if one is established.
- b. Recognize projected emission reductions achieved through energy efficiency or renewable energy projects in developing NOx emission projections, if the projects meet criteria established by EPA.

### **3. Incorporate greenhouse gas emission reduction and other air quality considerations in the decision-making process regarding utility restructuring**

Rationale The electric utility industry is in the process of de-regulation and major restructuring. Many decisions are yet to be made as to how the industry will be restructured at the national level as well as at the state level. The way in which the utility industry is restructured has significant implications for air quality, with many of the proposed changes carrying the potential for increased emissions. At the same time, air quality considerations and requirements will have a significant impact on the electric utility industry. The way in which the industry is restructured will also affect the cost of achieving and maintaining Wisconsin’s air quality goals. An integrated approach to addressing both the environmental and energy concerns should result in a better solution than if each were considered individually. The intent of this recommendation is to ensure that air quality and energy efficiency concerns are considered in the decision-making process

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<sup>2</sup> This was estimated in Wisconsin Greenhouse Gas Emission Reduction Cost Study, Report 3, WDNR, 1998

regarding electric utility industry restructuring.

#### Recommended Actions

- a. The Department of Natural Resources should actively participate in the restructuring decision-making process through formal and informal means. Examples might include staff level participation in PSC workgroups, review and comment on draft proposals, and official testimony at key junctures.
  - b. A screening system should be maintained to evaluate transmission alternatives for all proposed new transmission lines. The PSC has been leading a targeted area planning (TAP) collaborative in recent years to address this issue. TAP includes adding capacitors, reconfiguring the transmission line, installing distributed generation or end-use energy efficiency measures. The screening system could be a continuation of the TAP screening or a similar system.
  - c. The PSC (with input from the DNR, utilities and marketers, and others), along with the state Attorney General's office, should lead an effort to set ground rules for fair and accurate retail marketing. These ground rules should include disclosure of emissions, fuel mixes, and prices and conditions, as has been adopted in Massachusetts and Maine, and partially adopted in California. This effort will be coordinated with the national effort in order to avoid any duplication of effort.
  - d. Explore how net metering at retail rates could be made to work under retail competition after utility restructuring. Under net metering at retail rates, electricity customers who install small renewable generating systems (such as solar photovoltaic systems) and who generate more electricity than they can use, can sell electricity to the grid at retail rates rather than at wholesale or avoided electricity production rates. This provides a financial incentive for individuals or businesses to install such systems with some excess capacity to help defray the cost of installation. Currently, electric utilities in Wisconsin are required to provide net metering at retail rates for small (20kW or less) renewable generating systems installed and operated by electric utility customers. Circumstances will change under utility restructuring, so it will be necessary to explore how net metering could be made to work under retail competition.
- 4. Integrate the greenhouse gas emission reduction goals into other environmental policies and programs.**

Rationale The burning of fossil fuel emits a number of different air pollutants. Depending on the fuel burned, the combustion process and the control technology, these can include nitrogen oxides, sulfur dioxide, mercury and other heavy metals, and particulate matter as well as carbon dioxide. State policies should be implemented to encourage energy producers and energy users to consider an integrated, rather than a piecemeal, sequential, approach to emission reductions which may provide additional cost savings. The costs and benefits of the integrated approach should be evaluated relative to strategies that deal with issues incrementally over a period of time.

Recommended Actions

- a. Explore ways to credit voluntary energy-efficiency measures as progress toward meeting NOx reduction goals, but avoid double-counting.
- b. Expand the proposed system for crediting early reductions in greenhouse gas emissions to include other pollutants, such as mercury and fine particulate matter.
- c. Encourage companies adopting ISO 14000 and other environmental management systems to include the reduction of greenhouse gas emissions as one of the elements of their program.
- d. Encourage greenhouse gas emission reduction proposals through the WDNR's Environmental Cooperation Pilot Program.

**5. Carbon emission impacts of transportation system proposals**

Rationale: Most of the greenhouse gas emission reduction measures in this action plan target stationary sources of emissions such as power plants, factories, commercial and residential buildings. Yet transportation is a major source of greenhouse gas emissions in Wisconsin (45 million tons in 1990 or about one-third of 1990 emissions). We need to explore methods to reduce greenhouse gas emissions from the transportation sector.

One way to approach this is to assess the carbon impacts of major highway projects and overall transportation system proposals. Major transportation decisions made today set the stage for state travel habits for the next half century or longer. The carbon assessments would provide useful information to be considered in the development of plans, programs, and facility investments which meet transportation objectives and reduce the rate of growth of greenhouse gas emissions. Examples from other sectors, including the electric utilities, regarding conservation by end users could be used to

develop programs that result in the conservation of the use of private motor vehicles.

**Recommended Actions:**

1. State government should enhance its assessment of the carbon emission impacts of its major highway projects and overall transportation system proposals.
2. These assessments should be considered in the development of plans, programs, and facility investments which reduce the rate of growth of greenhouse gas emissions while meeting transportation objectives.

**6. Marketing Carbon Reducing Technologies**

**Rationale:** There is a rapidly growing national and international market for carbon reducing technologies. Carbon reducing technologies include energy-efficient appliances and other electrical equipment, more efficient ways to burn fossil fuels, and renewable technologies (wind, solar, geothermal, biomass). There is much expertise in Wisconsin in this area, and a number of Wisconsin businesses are leaders in manufacturing and marketing energy efficiency and other carbon reducing technologies. Wisconsin should position itself to take advantage of the potentially vast market for these technologies.

**Recommended Action:** Wisconsin state government, perhaps through the Department of Commerce, should work with industry groups to develop a strategic plan to take advantage of the growing national and international market for carbon reducing technologies. This program could be patterned on California's Energy Technology Export Program, run by the California Energy Commission, which helped spur \$330 million in foreign export sales from the state over an eight year period.

**IV. REDUCING EMISSIONS OF OTHER GREENHOUSE GASES**

All of the actions recommended above for reducing emissions focus on carbon dioxide. There are several other greenhouse gases, and emissions of some of those gases could be reduced voluntarily at zero or less net cost.

Recommendations for reducing methane and nitrous oxide emissions in Wisconsin are discussed below.

**Methane**

Wisconsin already has a state law requiring that landfill gas from new and existing large landfills be collected and burned either in a flare or for other purposes. Wisconsin is also participating as a partner in the U.S. EPA Landfill Methane Outreach Program, which is one of the voluntary programs in the U.S. Climate Change Action Plan. Through the Landfill Methane Outreach Program, EPA is working with states and landfill owners/operators to promote the use of landfill methane. Although several landfills in Wisconsin already do this, there are more landfills (both operating and closed) that could economically generate electricity from their collected landfill gas.

Recommended Action State government, working with landfill owners and EPA, should more vigorously promote the use of landfill gas. The landfill gas can be used for generating electricity, heating buildings, running motor vehicles, or it can be cleaned and sold to natural gas utilities.

### Nitrous Oxide

Over the past fifteen years, the state of Iowa has established a number of programs and demonstration projects to improve nitrogen management on their farms. These projects were initially conceived in response to nitrate contamination problems in groundwater and included the goal of producing a soil nitrogen test which would enable farmers to apply only required amounts of nitrogen fertilizers. Programs to educate farmers about nitrogen management were also implemented. Through these programs, Iowa farmers have significantly reduced their use of nitrogen fertilizers with no reductions in crop yields. Between 1985 and 1995, nitrogen fertilizer use in Iowa was reduced by two million tons, resulting in an estimated nitrous oxide emission reduction over the period of ten million tons of carbon dioxide equivalent. The reduction in fertilizer use resulted in savings of \$363 million and helped to improve groundwater quality. Wisconsin is an agricultural state and our farmers use large amounts of nitrogen fertilizer. It may be possible to reduce the amount of nitrogen fertilizer used in Wisconsin without reducing crop yields.

Recommended Action The DNR and the Department of Agriculture, Trade, and Consumer Protection should investigate this potential emission reduction measure.

## **V. STRUCTURE AND PROCESS TO MONITOR, DOCUMENT AND EVALUATE GREENHOUSE GAS EMISSION REDUCTIONS**

Phase I of Wisconsin's Climate Change Action Plan lays the groundwork for

future actions. In order to learn from this experience, a monitoring, documentation and evaluation component is critical.

## **1. On-going documentation**

Rationale Gathering and disseminating information on the impact of greenhouse gas emission reduction activities is an important tool for monitoring Wisconsin's progress in achieving reductions and for sharing experiences gained.

### Recommended Actions

- a. Document measures taken by the state and through each sector task forces' efforts and their associated emission reductions
- b. Work with the Wisconsin Energy Bureau to continue and maintain an easily accessible clearinghouse for sharing success stories and lessons learned
- c. Publicize and provide a catalog of greenhouse gas emission reduction measures prepared nationally. The State and Territorial Air Pollution Program Administrators and the Association of State and Local Air Pollution Control Officials (STAPPA/ALAPCO) have obtained a grant from USEPA to prepare a "menu of options" for reducing greenhouse gas emissions.
- d. Maintain an inventory of creditable emission reductions
- e. Prepare a 1999 Wisconsin Greenhouse Gas Emission Inventory

## **2. Monitor activities and progress**

Rationale Unless there is some accountability for monitoring the progress being made to implement the Phase 1 Climate Change Action Plan, it is likely that the results will be disappointing.

### Recommended Actions

- a. The Climate Change Committee should continue and be charged with overseeing the implementation and evaluation of Phase I. Since it is envisioned that the emission reductions will be achieved through voluntary actions led by sector task forces, the Committee, being made up of stakeholders, is a logical group to oversee the implementation, and later the evaluation, of Phase I.



- b. The Committee should receive semi-annual reports on the task forces' activities, based on the documentation described above, and determine whether and what assistance or additional actions might be warranted if it appears that progress is not being made.
- c. The Committee should oversee the preparation of a program assessment report which documents and evaluates the actions taken through the end of the year 2000. The report should be submitted to the WDNR Secretary by mid-2001.

**3. Inform the public about Wisconsin's climate change activities**

**4. Create a public recognition program for those who take actions to reduce greenhouse gas emissions in Wisconsin**

**VI. PARTICIPATE IN NATIONAL POLICY FORMULATION**

Rationale Decisions made at the national level will have a very significant impact on Wisconsin. Only by taking an active role in the national discussion can we be assured that the unique interests of Wisconsin are not lost in the national policy debate.

Recommended Actions

- a. Continue the Climate Change Committee and charge it with:
  1. Identifying national policy areas where Wisconsin has a strong interest in shaping the national debate. For example, if a greenhouse gas trading program is developed, how should it be designed to benefit Wisconsin?
  2. Researching and discussing the issue within the committee.
  3. Developing a suggested Wisconsin position to recommend to the DNR Secretary.

**VII. DEVELOP THE NEXT PHASE OF WISCONSIN'S CLIMATE CHANGE ACTION PLAN**

The development of the next phase of Wisconsin's Climate Change Action Plan should be based on the following elements:

1. Recent technological, economic and institutional developments
2. National and international policies and programs
3. An evaluation of Phase 1 so that we learn from our experiences

## **1. Gather information needed to develop the next phase of the Action Plan**

- a. Gather information on recent technological, economic and institutional developments that could affect greenhouse gas emission reduction strategies for Wisconsin.
  1. Evaluate potential for reduction of greenhouse gas emissions with currently available generation technologies and fuel cost information.
  2. Evaluate potential for reduction of greenhouse gas emissions with currently available energy efficiency and fuel switching measures.
- b. Gather information on national and international policies and programs that could affect greenhouse gas emission reduction strategies for Wisconsin.
- c. Evaluate Phase 1
  1. Conduct an evaluation of energy-efficiency initiatives undertaken in Phase 1. The following data should be evaluated for each end use sector (residential, commercial/institutional, industrial, transportation, agriculture):
    - a) current emissions for the sector
    - b) what the sector's emissions would have been under a "business as usual" scenario
    - c) estimated reduction impact of the measures taken
    - d) costs of the measures
    - e) participation rates by individual end-users (e.g., % of new housing participating in the House Energy Rating System)
    - f) analysis and evaluation of the relative effectiveness of different strategies and measures
  2. Conduct a similar evaluation of initiatives to switch toward cleaner electricity generation technologies and cleaner fuels.

## **2. Develop the next phase of Wisconsin's Climate Change Action Plan**

Based on the evaluation of actions and measures undertaken in Phase 1, the active participation in national policy formulation, and the maintenance of a catalogue of alternative reduction measures, we should be well poised to develop the next phase of an action plan that will work for Wisconsin. The Climate Change Committee should be an active

participant in the development of this next phase.

## **References**

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# **Summary of Discussion and Written Comments**

## **Introduction**

The purpose of this section is to provide policy makers and the public with insights into the Climate Change Committee's deliberations in developing the action plan and the different perspectives brought to the table. This discussion section provides additional information about the issues addressed by each individual recommended action. Many of the discussion points have been incorporated into the plan. However, in several instances, differing views were presented and are summarized in this section.

## **General Comments and Discussion**

Wisconsin Manufacturers and Commerce (WMC) comment: "While at first the idea of having a summary of discussion made sense, it may be better to let organizations' written comments speak for themselves. Given the extensive verbal and written comments on behalf of WMC, your outline appears to fall short in reflecting our concerns. I recommend we drop this summary of discussion document."

DNR Response: We have expanded this discussion section so it covers all of the concerns expressed by commenters and even includes many comments verbatim. We feel that it is more useful to policy makers to have comments summarized and organized by topic rather than publishing all comments received.

The general prerequisites for a climate change action plan approved by the WMC are:

*Action plan measures must be zero-cost.* Policy recommendations must be only those energy efficiency measures that are zero-cost to the state and its citizens. Zero-cost measures do not include actions that are "net zero cost" as a result of certain economic burdens assumed by one group being offset by the economic benefits to another group.

*Proposed actions must be voluntary.* If recommended actions are truly "no regrets," the state should not have to mandate them. Energy efficient

measures that actually result in the cost savings projected by DNR should stand on their own and be promoted by voluntary programs.

*Reductions must be fully creditable toward existing or future federal and state*

*mandates.* Wisconsin industry continues to be skeptical of the state taking unilateral actions not required of other states through federal programs. While being a "leader" in the abstract may appear laudable, Wisconsin businesses and citizens will be punished for such efforts if the federal government does not recognize these reductions. The result will be Wisconsin incurring increased economic burdens compared to other states. It is imperative that the state of Wisconsin receive absolute assurances that any climate change reduction measures are fully creditable under existing (e.g., EPA's NOx SIP call) or future federal mandates.

*No commitment now to future yet-to-be-prescribed actions.* While Phase I of DNR's initially proposed Climate Change Action Plan relates to energy efficiency measures, subsequent phases were outlined that would result in substantial economic burdens on Wisconsin. There is no need to, nor is there any possibility that WMC would commit now to such subsequent phases.

The Wisconsin Road Builders Association (WRBA) also expressed concern with the Wisconsin leadership role envisioned by the committee. They state that proceeding now with a Wisconsin strategy before an international treaty is finalized and before the Congress ratifies it and develops a national implementation policy makes little sense, especially given the concerns about multi-state competitive issues and the fact that national performance standards will likely prove the most effective compliance tool.

The Wisconsin Highway Users Conference states in their written comments on draft 3: "Because potential climate change is an issue of global scope, the appropriate initial governmental action is at the level of nations."

Environmental groups counter this by noting that national policy improvements are often started at the state level, and that state level efforts now will later help Wisconsin more efficiently comply with likely national emission standards. They note that with a planned head start, Wisconsin could encounter fewer dislocations of all sorts and could gain a competitive advantage, not a disadvantage. They also note that if national steps are the best way to achieve the global goals, they would feel more comfortable with

the WRB's suggestion if they saw evidence that the WRB was active with fellow road builders to achieve those national steps, such as stronger vehicle emission standards.

Regarding why Wisconsin should lead the way, the Sierra Club representative states in a written comment: "Global warming is a reality. It is morally incumbent upon us to take action to reduce Wisconsin's emissions, regardless of what other states or the feds may or may not be doing. Having other states as accomplices doesn't make us any less culpable for our emissions."

The Wisconsin Department of Transportation (WDOT) notes that the plan needs to be quantified in order to be compelling. Costs should be estimated and included wherever possible for action items. Benefits, quantified in terms of potential emission reductions, should also be estimated wherever possible for action items. The plan needs to quantify or explain the statement "actions which pay for themselves through energy savings". The plan should explain that "zero cost" may involve some up-front costs, but that these costs will be "paid back" over a certain number of years. Others echoed this last item [utilities, Union of Concerned Scientists (UCS)].

Response: This explanation has been added to the plan (see page 4).

WMC noted that there continues to be insufficient information to conclude that some recommended actions are indeed no cost, or even cost effective. A related issue is the prospect that those groups that are targeted to benefit economically from energy efficient measures (e.g., homeowners) may not be the same groups targeted to pay for the related financial incentives (e.g., Wisconsin businesses). Such a result is not "no regrets."

WMC further noted that: "Agency program costs of implementing the recommended actions are not addressed in the report. Industry representatives have already noted concerns that expanding climate change efforts within the Air Bureau will divert needed resources from more pressing concerns such as the issuance of air permits on a timely basis. This issue is particularly troublesome in light of industry's expectation that DNR's Air Bureau will seek additional air emission fees to compensate for industry's success in reducing air pollution. Expansion of DNR's and other agencies' climate change programs must be justified in light of the limited resources available to state government and more pressing priorities."

Response: DNR greenhouse gas and climate change activities are not funded through air emission fees. They are financed through grants from EPA.

The Wisconsin Petroleum Council notes that there are many references to providing financial incentives and subsidies to alternative energy sources throughout the draft plan. These programs will cost money to implement, and the costs will be passed on to taxpayers. They state that the department should better define how much might be needed to fund each of these programs and where the revenue might come from. Then the committee could better assess which programs would truly cost nothing to implement. They state: "It will be difficult for our association to endorse any plan that recommends government programs that will cost taxpayers in the end."

WMC noted that Phase I of the action plan refers to "...no regrets actions, which pay for themselves through energy savings and which are relatively easy to implement." They point out that not all costs were considered in determining whether an action was indeed "no regrets." They recommend that DNR articulate costs more fully, including agency program costs, costs to the state for its "lead by example" measures, and otherwise clarify that not all proposed actions under the first phase are "no regrets" as we understand that term.

Response: We have worked with the Energy Bureau to estimate some of these costs, especially for the "state leads by example" measures. We have also added language to the text to clarify what "no regrets" means and to point out that some recommended actions are not "no regrets".

The Wisconsin Highway Users Conference notes that language in the previous draft but removed from draft 3 had specified that the plan's first phase objective was to implement identified measures of "up to zero cost per ton. They regard the removal of this language as problematic.

Response: This language was removed in response to committee discussion to delete references to the specific cost scenarios described in Report 3. However, the primary objective of Phase 1 actions remains to promote "zero cost" or "no regrets" measures.

## **Discussion and Comment on Specific Parts of the Action Plan**

### **Introduction**

Near the top of page three it is mentioned that investing in energy efficiency



measures to reduce greenhouse gas emissions will create 8,500 jobs in Wisconsin. The Petroleum Council noted that if this reference is included, we must say something about what types of jobs will be created. They also ask; "Are these new jobs, or will they replace jobs that are lost because of a change in policy?" Another commenter asks if these jobs are long term or temporary, and notes that temporary job markets can have negative socio-economic impacts.

Response: The modeling and methodology used to project the number and types of jobs created and lost are documented in Report 4 of the emission reduction cost study. (UW Consortium for Integrated Resource Planning, 1998)

Another comment on this paragraph, by Northern States Power (NSP), notes that introducing the potential economic benefits of reducing greenhouse gas emissions is misleading, since the model used to develop this data did not have all the pertinent information, i.e., program costs for energy efficiency improvements.

## **Phased Climate Change Action Plan**

In the second paragraph in this section, the objective of the next phase of the action plan is stated as "recommend state and local policies and actions to dovetail with international and national policies to achieve the agreed upon national and international targets for greenhouse gas emission reductions." WMC notes that Wisconsin industry may consider voluntary actions that aim toward federal or international "targets," but it is premature to agree now to put in place later "policies and actions" to meet yet-to-be- defined targets.

Response: The policies and actions recommended in the next phase of the action plan will follow the direction taken at the national level.

## **I. Actions to Implement Energy Efficiency Measures**

### **Introduction**

On page 8 there are two references to the importance of consumer education programs. The PSC commenter asks: Who does the consumer education programs and how are these programs part of the recommendations on page 9?

### **1. State of Wisconsin Leads by Example**

Wisconsin Manufacturers and Commerce (WMC) raised the concern that actions taken by state government should be cost-effective.

Response: There was general agreement that measures taken by the state should be reasonably cost-effective considering all of the responsibilities of state government. However, in its role of leading by example, there may be instances where state government demonstrates or pilots a new technology which has great potential to be cost-effective once proven.

Another issue was the cost of implementing such a state program. (WMC)

Response: It was pointed out in discussion that many of the activities recommended in the plan focus on better coordination of existing activities around the goal of reducing greenhouse gas emissions and thus would not result in significant additional administrative costs. It was further agreed that the DNR and the Energy Bureau would develop an estimate of the possible program costs and benefits.

A third issue raised was the importance of gathering data on the state activities undertaken to reduce GHG emissions and their impacts on energy use, costs and environmental emissions. There was general agreement that gathering and disseminating data on the costs and benefits of these activities would be useful.

WDOT commented on the recommendation that state government should establish a comprehensive Transportation Demand Management Plan for state agencies. DOT pointed out that there has been no analysis of the costs of developing and implementing a transportation demand management plan for state agencies, whereas most of the other recommended actions in the plan are included because they met the criterion of net zero cost. The recommendation also stated that state government should explore parking cashout programs. DOT noted that parking cashout is not applicable to state employees, since state employees already pay for parking. The reference to parking cashout has been removed from the plan. DOT also pointed out that the state already encourages car-pooling by state employees through its rideshare program and encourages state employees to carpool to out-of-office meetings.

*Draft 3, Item f: State government should enhance its assessment of the carbon emission impacts of its major highway projects and its overall transportation system proposals. These assessments should*

*be compared against transportation-related emission reduction goals and a state transportation investment plan designed to achieve those reductions.*

Note: This item has been moved and has become item number 5 in Section III, State Policies to Promote Greenhouse Gas Reductions.

There was much discussion and comment on this item. Some committee members (DOT, Road Builders Association) thought this item should be removed from the plan for the following reasons:

- 1) This is already done in environmental assessments of highway projects. (WRBA, DOT)
- 2) The state should not be setting GHG emission reduction goals for the transportation sector since the key transportation variable is fuel efficiency, which is a federal rather than a state policy issue. (WRBA)
- 3) Accepting a higher level of congestion by deferring major projects will significantly reduce fuel efficiency and increase emissions. (WRBA)
- 4) The carbon emission level of a project should not be the determining factor in a highway project. Given the other air quality analyses we already conduct, this recommendation would result in poor decision making and a skewed environmental review process. (DOT)
- 5) This item affects the state economy and people outside of state government, while the other items only affect internal state government management of its facilities and workforce. (WRBA)
- 6) The state is already conducting a conformity analysis on its transportation plans and projects in ozone non-attainment areas, and its resources should be concentrated in areas where the biggest air quality problems exist. (DOT)
- 7) As written, the recommendation assumes that investments in major projects lead to increased emissions. We do not agree. The largest factor driving travel growth is the economy. In many cases, major projects upgrade existing highway corridors in response to development. Adding capacity in these situations minimizes induced travel. (WRBA)

The environmental groups noted that DOT is a multimodal transportation agency and that major transportation projects are not necessarily highway projects. They also noted that:

- 1) Providing Wisconsin taxpayers with emission goals to inform their decisions regarding how to invest their money in a multimodal mix of transportation services is an appropriate activity for this section.
- 2) It is not true that other parts of this section (i.e. State Government Leads by Example) affect no one in Wisconsin's private sector. For example, purchases of fuel efficient and clean fuel cars will affect car dealers and gasoline vendors within Wisconsin.
- 3) Rather than propose increasing congestion, this action implies moving goods and people more efficiently with a variety of modes.
- 4) We cannot understand why the road industry and private motor vehicles should be exempt from making efforts to reduce greenhouse gas emissions when, for example, private utilities are not.
- 5) The major justification of WisDOT for its ambitious highway expansion projects is always public safety. However, mass transit consistently generates only 1% of the fatalities per passenger mile of SOVs. If lives-saved-per-dollar-spent is the true goal of our transportation policy, then we need to embark on the most rapid conversion practical from highway expansion programs to transit expansion programs. This conversion would also effect a very beneficial reduction in transportation-related greenhouse gas emissions.
- 6) The same growth in vehicle miles traveled which undermines our air quality efforts is generating expensive and nearly unsolvable congestion problems. In short, setting GHG emission reduction goals for state transportation investments would make a world of economic as well as environmental sense for Wisconsin.

Response: The wording of this recommendation has been changed to clarify it and the sentence referring to transportation-related emission reduction goals has been deleted.

As stated in the rationale for this recommendation, transportation is a major source of greenhouse gas emissions in Wisconsin, and we cannot ignore it when trying to reduce emissions. The action plan attempts to treat each sector equitably and not leave out or overly burden any sector. Each sector needs to do its part to help reduce greenhouse gas emissions.

## **2. Vigorously promote voluntary private sector-led initiatives to adopt energy efficiency measures**

The issue was raised as to whether or not these private sector initiatives would promote only "net zero cost" measures.

Response: It was agreed that the targets established and measures promoted would be selected by the participants in these groups, so it will be up to their discretion. Also, no one supported the idea that anyone should be discouraged from doing more than what is “net zero cost” if they want to do that. For example, emission reduction measures which do not appear to be cost-effective when analyzed solely from a GHG emission reduction perspective may be cost-effective if other air pollutant emission reductions are included in the analysis.

### **3. Financial incentives for cost effective energy efficiency measures**

The issue was raised about the uncertainty of funding sources and uncertainty about where the decisions on funding will be made.

The Northern States Power representative commented: “During the last meeting of the Climate Change Committee it was my understanding the reference to the Public Benefits Fund would be removed except for use as an “e.g.” phrase. The inclusion of the Public Benefits Fund as an example with a full paragraph explanation is no different than the previous draft of the Plan. It is very disappointing to have a compromise agreement on the removal of certain text only to see the authors manipulate the text to include the objectionable concept later in the Plan. The inclusion of this ‘editorial’ in the Plan is unacceptable, and as stated during the last meeting, will be addressed by the State Legislature which has already been identified in the recommendation. Since the aforementioned compromise agreement has been ignored, NSPW recommends the removal of any reference to the Public Benefits Fund.”

WMC's comment on the public benefits fund: “Most of the discussions relating to financial incentives note as a potential funding sources the Public Benefits Fund. Reliance on such a fund is misguided. First, the fund has not been established by the Legislature and industry representatives would likely oppose the levels proposed by the PSC. Second, there has been no analysis showing that such money would result in comparable savings. Any direct or indirect energy tax on Wisconsin businesses and citizens cannot be justified without clear benefits, which have not been sufficiently outlined in this report.”

Response: As pointed out by NSP, it was agreed at the last Climate Change Committee meeting that the reference to a public benefits fund, as proposed by the Public Service Commission, would be retained, but only as an example

of a possible funding mechanism. The “objectionable editorial” language referred to by NSP has been removed.

*Item b: Increase private and public lender and realtor participation in the Home Performance Rating Program to promote energy mortgages and use the rating to process energy mortgages and home equity loans for home buyers and home owners...*

The question was asked about how this participation would be increased.

Response: It was noted that this would be done by the residential sector task force.

#### **4. Revise or update state codes to support increased energy efficiency.**

*Item a: By 1998, adopt proposed changes to the Uniform Dwelling Code which approximate the requirements of the CABO Model Energy Code 1995. By 2001, adopt changes to the Uniform Dwelling Code which approximate the requirements of the CABO Model Energy Code 1998.*

*Item b. By 1999, adopt changes to the Rental Weatherization Code that are cost-effective, and include a performance-based alternative method of compliance.*

On items a and b, the comment was made that the Department of Commerce is in the process of updating or plans to update these codes already. WMC expressed the concern that these proposals not be used as an "end around" the normal advisory process used by interested parties such as building and real estate associations when revising Wisconsin's building code.

Response: It was agreed that the Department of Commerce would be asked about the current status and frequency of code updates. It was also agreed that this section of the action plan will be submitted to the Department of Commerce and/or the code advisory committee for review and comment.

*e. By 2000, require that communities of less than 2,500 enforce the Uniform Dwelling Code and conduct site inspections to ensure compliance with the energy provisions of the UDC.*

Item e is seen as desirable from the perspective of uniform enforcement of codes (and thus equity) but is made potentially controversial by the financial burden this may place on small community governments.

The issue was raised by the Paper Council and the WMC that building codes are mandatory and not voluntary. The Paper Council suggested that any references to regulatory changes be limited to changes necessary to enable or enhance voluntary efforts.

## **II. Actions to Promote A Shift to a Higher Proportion of Cleaner Energy Sources and Technologies**

### **Introduction**

The Wisconsin Petroleum Council notes that while the public may benefit in terms of better air quality, switching to alternatives other than carbon based fuels will come at an enormous cost to the public and many industries will suffer because of the higher cost of energy. They say this will lead to industries shutting down resulting in the loss of jobs. They also note that the plan should include new technologies which allow for more clean and efficient use of fossil fuels.

The WMC notes that: "Throughout the proposed action plan report DNR focuses on promoting cleaner sources of energy than fossil fuels. While proponents cite the public benefits from the development of wind, solar, and geothermal resources as well as other "renewable" sources of energy, such support comes at a cost. Simply put, few renewable technologies are economically competitive - a fact glossed over throughout the report. A more thorough analysis of the costs of these fuel sources is appropriate to address the "no regrets" theme of this report."

WMC also noted that "it is hard to argue with your conclusion that "the public will benefit from a shift to energy sources and technologies which are more efficient and less polluting." But, we would likely disagree that renewable energy sources meet that efficiency criterion.

Response: Through the recommendations in the action plan, we are proposing greater diffusion and adoption of proven clean power technologies. Many of these are cost-effective over their lifetimes. As noted in the rationale for this part of the action plan, not all of the environmental and social costs of fossil fuel combustion are included in energy bills. This makes them appear to be more cost-effective than they actually are when compared to renewable technologies. But renewable technologies need a little push to become more cost-effective and competitive in the market, hence the recommendations for research funding and the support for cleaner technologies.

### **1. Wisconsin state government leads by example**

WMC expressed concern about the cost to taxpayers of these actions.

Response: It was generally agreed that any actions by state government should be cost-effective or represent limited demonstration projects.



It was suggested that a broader range of cleaner fuels be included in the list and this was done with the general agreement of the group.

**2. Vigorously promote private sector-led initiatives to move toward cleaner energy sources and technologies**

The issue was raised by Northern States Power (NSP), Wisconsin Electric (WE) and the Energy Bureau that, wherever possible, these activities should build on existing programs and groups.

Response: This was agreeable to the other parties and was incorporated in the action plan language.

The Wisconsin Paper Council noted that this section seems to apply to more than traditional electric utilities. In particular, it seems to include post-restructuring entities like power supply marketers. They note that it is not clear if this section is intended to apply to industrial companies that sell excess electricity and would like this to be clarified.

Response: This section is intended to apply to the electric utility industry and not to industrial companies that sell excess electricity. However, any company or group interested in helping to develop or carry out voluntary actions to reduce emissions per kWh is welcome to participate.

*Item c: The task force for operators of the electric transmission and distribution systems will set goals for reducing the emissions that are lost during the transmission and distribution process and work to achieve these goals by developing and implementing innovative voluntary actions to reduce transmission and distribution system losses.*

The Union of Concerned Scientists(UCS) suggested that the task force on transmission and distribution should focus on the potential for energy efficiency and distributed generation from renewable energy to delay new investments in transmission and distribution while producing climate change benefits. The PSC had been leading a targeted area planning (TAP) collaborative in recent years to address this issue, but it did not result in any significant investment in distributed resources. The action plan should recommend the implementation of TAP.

Response: This was included as recommended action number 3b in Section III, State Policies.

*Item d: The task force for retail power marketers will set goals for reducing the emissions per kWh sold to consumers and work to achieve these goals by developing and implementing innovative voluntary actions to market electricity produced with lower emissions per kWh.*

The UCS noted that current regulated utilities may be able to cooperate in this area, but as the industry becomes increasingly competitive, green pricing programs are likely to become proprietary and sensitive areas. If a task force is not workable, it may make more sense for the DNR to challenge all utilities in the state to offer green pricing options to all customers, as the PSC has done.

Moreover, UCS suggested that DNR, along with the state Attorney General's office should lead an effort to set ground rules for fair and accurate retail marketing. These ground rules should include disclosure of emissions, fuel mixes, and prices and conditions, as has been adopted in Massachusetts and Maine, and partially adopted in California.

Response: This latter recommendation was included as recommended action number 3c in Section III, State Policies.

*Item e. Each task force will establish a system for tracking progress toward the goals they have set, disseminating information about what has worked and what has not worked, and publicizing progress toward the goals they have set.*

The PSC notes that if there is competition in cleaner power, sharing information on what works would be less likely. NSP notes that information on clean energy resources may become proprietary under deregulation.

### **3. Financial incentives to increase renewable energy use**

The group went through the same discussion on funding sources as described for the section on "financial incentives for energy efficiency". WMC noted that they have concerns about the recommendation (3b) to utilize public funding to increase renewable energy use.

On net metering, the issue was raised that there is some uncertainty about how net metering would work after electricity restructuring.

Response: It was agreed that the language would be changed to recommend that the issue of how net metering could work after restructuring should be

explored. Also, this recommendation was moved to become recommendation number 3d in section III, since it seems to fit better there. (Section III.3 deals with electricity restructuring.)

#### **4. Participate actively in research and development projects designed to reduce emissions per unit of energy generated**

WMC notes that DNR should quantify the level and explain who gets taxed to provide the "public funds for environmental research and development".

The group went through the same discussion on funding sources as described for the section on "financial incentives for energy efficiency".

*Item b. Support the continuation and expansion of existing R&D institutions (e.g. the Energy Center of Wisconsin and University of Wisconsin renewable energy research) and funding programs in Wisconsin.*

Northern States Power commented that this recommendation should be rewritten to indicate the continuation of existing R&D funding levels for Wisconsin. Whether the research is done by Wisconsin institutions should not be the issue. By allowing other institutions to utilize the same funds, more research could be done if Wisconsin's resources can be used to leverage resources from other states or the federal government. Others noted that the benefit of having research done by Wisconsin -based institutions is that it can be tailored to meet Wisconsin needs and circumstances and differs in its focus from national research.

The PSC notes that this recommendation could also go under Section I since R&D helps further new energy efficient technologies.

Response: The Department notes that funding levels are addressed in recommendation a, and the recipients (in-state or out-of -state) of the funding are not specified. The intent of recommendation b is that Wisconsin should support Wisconsin institutions doing this type of research.

*Item d. Conduct research on environmental issues related to renewable technologies, such as avian monitoring for wind power and habitat effects of biomass crops. This research could be conducted by a university, the DNR or another research organization with funding from the federal or state government, the electric utilities, or the manufacturers, assemblers and installers of the renewable technologies.*

NSP objects to the inclusion of this recommendation because it is too generic and research efforts on some of these topics may already be in place. In addition, it gives the impression that it is not voluntary, and there is no

analysis on whether the research violates the “no regrets” tenet of Phase 1 actions.

Response: DNR recognizes that the research recommendations go beyond the “no regrets” measures. Research is an investment in the future. By definition there is more risk involved in research than in adopting proven technologies. Research is included in the action plan because it is an important element in building the foundation for a more energy efficient and less polluting future.

### **III. State Policies to Promote Greenhouse Gas Emission Reductions**

#### **1. Credit for early emission reductions**

There was strong agreement that this is an important part of the action plan and that efforts to ensure credit for early actions should be one of the first things that is done.

There was much discussion on how emissions and emission reductions should be tracked. It was pointed out that there are not yet any internationally recognized reporting requirements for greenhouse gas emission reductions and that these will be developed in a few years. It was also pointed out that those who want credit for early reductions will need to help shape the requirements so that they are workable for reporting organizations.

WMC comments: “DNR accurately describes the issue, but places too much emphasis on establishing a reporting system. Industry associations need written assurances from appropriate regulatory agencies before they would recommend to member companies that they consider voluntary reductions.”

Response: This has been incorporated into the plan.

The Wisconsin Paper Council noted that the only way to ensure that companies are not penalized for early reductions is to wait until a federal plan has been developed so we know what the rules of the game will be.

#### **2. Include energy efficiency as part of state strategies and plans for meeting emission reduction requirements for other pollutants, including the development ozone and other state implementation plans, such as PM2.5.**

No significant issues were raised on this point.

#### **3. Incorporate greenhouse gas emission reductions and other air**

### **quality considerations into the decision-making process regarding utility industry restructuring**

WMC comment: "It is unclear what DNR intends by this recommendation. We understand that environmental groups attempt to hold restructuring hostage until severe, otherwise not justified regulations are imposed on utilities (e.g., New Source Review technology on existing sources.) We suggest this proposed action be deleted."

Response: The intent of this recommendation, as stated in the rationale, is to ensure that air quality and energy efficiency concerns are included and not ignored in the decision-making process regarding electric utility industry restructuring. Language to this effect has been added to the rationale to clarify the intent.

#### **4. Integrate the greenhouse gas emission reduction goals into other environmental policies and programs**

No significant issues were raised on this point.

### **V. Structure and Process to Monitor, Document, and Evaluate Greenhouse Gas Emission Reductions**

There was general agreement on the importance of gathering data to document the impacts of the actions taken, informing the public about actions taken and recognizing the achievements of organizations.

### **VI. Participate in the National Policy Debate**

There was general agreement that this was an important activity.

### **VII. Develop Next Phase of Wisconsin's Climate Change Action Plan**

There was general agreement that gathering and utilizing current information would be important to the development of the next phase of the action plan, including new technological, economic, and institutional developments; new national and international policies and programs; and review of the results of Phase 1. There is an understanding that the development of the next phase will follow the direction taken at the national level.

